

The US CMS Constitution

The US CMS Collaboration consists of physicists from many groups at universities and national laboratories which are committed to doing physics at the Compact Muon Solenoid (CMS) detector at the Large Hadron Collider (LHC) located at CERN. The project aspects of this Collaboration are set forth in the US CMS Project Management Plan (PMP), current draft - August 1997. This document defines the governance of the US CMS scientific collaboration.

1. Membership

All US institutions, which are members of the CMS Collaboration, are members of the US CMS collaboration. Institutions, which have applied for CMS membership but have not yet been accepted or rejected, shall be non-voting members of the US CMS Collaboration. (The US CMS institutions are shown in Table A-1 and the institutions together with their members are listed in Table A-2.) Procedures for becoming a member of CMS are described in the CMS Constitution.

2. CMS Organization

The CMS governance is described in the CMS Constitution - CMS Constitution, Sept. 13, 1996. The executive body of CMS is the management board (MB), whose structure is shown in Fig. A-1. Technical issues are the responsibility of the CMS Technical Coordination Office. Financial aspects of CMS are the province of the CMS Finance Board (Fig A-2)

The subsystems of CMS are shown in a schematic of the detector, Fig. A-3 . As is evident from the CMS MB structure, the subsystems of CMS are organized as distinct subprojects. Each subproject has an Institutional Board (IB) Chair, a Project Manager and a Resource Manager. The subproject organization for Muons, HCAL, TRIDAS, ECAL, Tracking, Software and the Magnet are shown in Figs. A-4 through A-10 respectively.

As can be seen in Fig. A-1 to A-10, US CMS physicists have positions of authority within CMS. The US CMS groups participating in each of the CMS subsystems are listed in Table A-3. The governance of the US CMS Collaboration has been patterned on that of CMS, with differences arising as required by the dictates of project management in the US.

3. Collaboration Board

The US CMS Collaboration Board (CB) is the governing body and highest authority of the US CMS Collaboration. The Collaboration Board is composed of one representative from each US institution that is a member of the CMS Collaboration. An Institutional Representative is chosen by each US CMS institution. The US CMS Spokesperson is elected by the board, and serves as the US representative on the CMS Management Board. Collaboration Board decisions are reached by consensus whenever possible. In the event a consensus cannot be reached, matters are decided by a majority vote of the members. (The current US CMS Collaboration Board members are listed in Table A-1).

Chair

The US CMS Spokesperson serves as the Chair of the US CMS CB.

Meetings

The US CMS Collaboration Board shall hold at least one meeting per year. Presently, the annual meeting and election of officers is held in the spring (April), and a second meeting is held in the fall before the annual budget submission. Other meetings may be called as necessary by the Spokesperson, or by 25% of the Collaboration Board members. Collaboration Board meetings will be open to all US CMS members, but only the Institution Representative or designee may vote.

Minutes of all US CMS Collaboration Board meetings shall be provided by the US CMS Spokesperson. The minutes shall be submitted for approval at the next subsequent Collaboration Board meeting, and shall be publicly available to all US CMS Collaboration members.

Voting

Each US CMS Institution shall have one vote, to be cast by the Institutional Representative or his/her designee. The Institutional Representative may designate another CMS member from the same institution as that institution's voting representative.

Elections

Nominations for US CMS elective offices may be made by any US CMS member and must be seconded by a member of the Collaboration Board. The US CMS Technical Director shall supervise the election of the US CMS Spokesperson. The US CMS Spokesperson shall supervise the recommendation of candidates for the US CMS positions of Technical Director and Construction Project Manager to the DOE, NSF, and Fermilab for appointment by them. Elections shall be conducted by e-mail

ballot, with the majority of votes of all US CMS institutions being required for election. In the event no candidate receives a majority vote on the first ballot, a runoff between the two candidates receiving the largest number of votes shall be conducted.

Elective Offices

The US CMS elective offices are the US CMS Spokesperson and the chairs of the respective institution boards of the EMU, HCAL, TRIDAS, ECAL, Tracking, Physics, Software, and Education. The IB for Physics and Education is, by definition, the full CB. The term of office for elected positions is two years with the possibility of renewal. In the event of a vacancy in an elective office, a special election to fill the unexpired term shall be conducted.

Responsibilities

The US CMS CB shall vote on the addition of new groups to the US CMS Collaboration. The allocation and distribution of speakers at scientific conferences and meetings is also the province of the CB. The distinct IB subsets of the CB are responsible for the election of the members of the US CMS Executive Board (defined below).

Appointed Offices

The US CMS appointed offices are relevant to the project aspects of US CMS and are explained in detail in the US CMS PMP. They begin with the Technical Director and the Construction Project Manager. The nominees are recommended by US CMS Collaboration Board to DOE, NSF and Fermilab. The TD and CPM are subsequently appointed by DOE, NSF and Fermilab. In turn, the TD and CPM appoint Level 2 managers for the WBS categories of EMU, HCAL, TRIDAS, ECAL, Tracking, and Common Projects. The full project structure is detailed in the US CMS PMP.

Competence

Should serious problems arise concerning the performance of any member of the US CMS Executive Board, the recommendation for change shall be brought by the US CMS Spokesperson. A recommendation for change of the Spokesperson would be brought by the US CMS TD. A recommendation for change will be adopted upon the affirmative vote of 2/3 of the members of the US CMS Collaboration Board. Appointees serve at the pleasure of the appointing authority; the TD and CPM, in the case of L2 managers, and DOE, NSF, and Fermilab in the case of the TD/CPM.

4. Executive Board

The US CMS Executive Board is the executive body of the collaboration. All major decisions of the US CMS Executive Board will be submitted to the US CMS Collaboration Board for ratification. The Executive Board is composed of the US CMS Spokesperson and of an elected representative from Physics, Education, Software, EMU, HCAL, TRIDAS, ECAL and Tracking institution boards. The organization and present membership of the US CMS Executive Board are shown in Fig. A-11.

Minutes of all US CMS Executive Board meetings shall be provided by the US Spokesperson. The minutes shall be submitted for approval at the next subsequent Executive Board meeting, and shall be publicly available to all US CMS Collaboration members. The Executive Board, with its elected subsystem leaders, serves as the interface between the Project Management and the Collaboration.

Spokesperson

The responsibility for the scientific direction of US CMS rests with the US CMS EB and in the EB Chair, the US CMS Spokesperson. During the course of construction of CMS, when issues of the scientific goals of US CMS arise, they will be brought to the EB by the TD or CPM for consultation. As US CMS matures as an experiment, the EB will continue to exercise the scientific direction of US CMS.

Coordination of the Project and the Collaboration

Joint meetings of the US CMS Project (i.e. TD, CPM and L2 Managers) and the Executive Board will be regularly held so as to insure good communication between the US CMS Collaboration and the Project Management. The US CMS EB is responsible for the scientific aspects of the US CMS Collaboration, while the US CMS Project is responsible for the financial and technical aspects of the construction of the US CMS detector elements.

L2 Managers

The L2 managers are appointed by the TD/CPM, upon the recommendation of the relevant subsystem IB. The L2 managers correspond to the L2 categories in the WBS; EMU, HCAL, TRIDAS, ECAL, Tracking, Common Projects. In the case of Common Projects there is no IB, and the L2 manager is directly appointed by the TD/CPM. A L2 manager can be removed at any time by the TD/CPM after consultation with the US CMS EB.

US Subsystem Representatives

Each of the eight US Institutional Boards (Physics, Education, Endcap Muon, Hadron Calorimeter, Trigger/Data Acquisition, Electromagnetic Calorimeter, Tracking, and Software) shall biennially elect a representative to the US CMS Executive Board. The Institution Board is composed of one representative of each US CMS institution that is participating in the corresponding area (Table A-3). The elections will be organized by the Spokesperson, acting as Chair of the Executive Board, and will require the majority of the votes cast by the subsystem Institution Board for election. In the event no candidate receives a majority of the votes cast on the first ballot, a runoff between the two candidates receiving the largest number of votes shall be conducted. In the event of a tie, the deciding vote shall be cast by the US CMS Spokesperson.

5. Relationship to US CMS Project

The US CMS Collaboration, represented by the Collaboration Board, elects the Executive Board, which is chaired by the Spokesperson. Scientific issues for CMS are communicated to the US CMS Project Management by the Executive Board. This communication on scientific matters is distinct from line authority for the US CMS Project. However, it is a necessary link to the Project to convey the scientific concerns of the Collaboration.

6. Ratification and Amendments

This constitution shall be ratified by the majority vote of the US CMS CB. Subsequent amendments may become necessary as the experiment evolves toward execution beginning in 2005. These amendments can be proposed by any member of the US CMS CB, and shall be voted upon. A majority vote is required for adoption of an amendment.

Table A-1 US CMS Collaboration Contact Persons

US CMS Collaboration	
Spokesperson: H. Newman	Technical Director: D. Green Construction Project Manager: E. Temple
Institution	Contact Person
University of Alabama	L. Baksay
Boston University	L. Sulak
Brookhaven National Laboratory	C. Woody
University of California, Davis	W. Ko
University of California, Los Angeles	K. Arisaka
University of California, Riverside	J. G. Layter
University of California, San Diego	J. G. Branson
California Institute of Technology	H. Newman
Carnegie Mellon University	T. Ferguson
Fairfield University	D. Winn
Fermi National Accelerator Laboratory	D. Green
University of Florida	G. Mitselmakher
Florida State University	V. Hagopian
Florida State University (SCRI)	M. Corden
University of Illinois at Chicago	M. Adams
University of Iowa	Y. Onel
Iowa State University	E. W. Anderson
Johns Hopkins University	C. Y. Chien
Lawrence Livermore National Laboratory	C. Wuest
Los Alamos National Laboratory	H. J. Ziock
University of Maryland	A. Skuja
Massachusetts Institute of Technology	P. Sphicas
University of Minnesota	R. Rusack
University of Mississippi	J. Reidy
University of Nebraska	G. R. Snow
Northeastern University	S. Reucroft
Northwestern University	B. Gobbi
University of Notre Dame	R. Ruchti
Ohio State University	T. Y. Ling
Princeton University	P. Piroue
Purdue University	V. E. Barnes
Rice University	D. L. Adams
University of Rochester	A. Bodek
University of Texas at Dallas	E. J. Fenyves
Texas Tech University	R. Wigmans
Virginia Polytechnic Institute	L. W. Mo
University of Wisconsin	W. H. Smith

Table A-2: US CMS Institutions and Members

University of Alabama

L. Baksay*, B. Rouchouse, G. Zilizi

Boston University

E. Booth, R. Carey, S. Doulas, E. Hazen, O.C. Johnson, F. Krienen, J. Miller,
D. Osborne, B.L. Roberts, J. Rohlf, A. Rosowsky, L. Sulak*, J. Sullivan, W. Worstell

Brookhaven National Laboratory

J. Kierstead, P. Levy, S. Stoll, C. Woody*

University of California, Davis

R. Breedon, Y. Fisyak, G. Grim, B. Holbrook, W. Ko*, R. Lander, S. Mani, D. Pellett,
J. Rowe, J. Smith

University of California, Los Angeles

K. Arisaka*, Y. Bonushkin, F. Chase, D. Cline, S. Erhan, J. Hauser, J. Kubic,
M. Lindgren, R. Ojha, S. Otwinowski, P. Schlein, Y. Shi, X. Zeng, J. Zweizig

University of California, Riverside

D. Chrisman, J.W. Gary, P. Giacomelli, W. Gorn, J.G. Layter*, B.C. Shen

University of California, San Diego

J.G. Branson*, I. Fisk, H. Kobrak, G. Masek, M. Mojaver, H. Paar, G. Raven,
M. Sivertz, R. Swanson, A. White

California Institute of Technology

J. Hanson, A. Kirkby, W. Lu, R. Mount, H. Newman*, S. Shevchenko, A. Shvorob,
R. Zhu

Carnegie Mellon University

R. Edelstein, A. Engler, T. Ferguson*, R. Kraemer, M. Procario, J. Russ, R. Sutton,
H. Vogel

Fairfield University

C.P. Beetz, S. Hellerman, J. Iosifidis, P. McLoughlin, V. Podrasky, M. Saganich,
C. Sanzeni, H. Silvestri, T. Toohig, D. Winn*

Fermi National Accelerator Laboratory

M. Atac, E. Barsotti, A. Baumbaugh, U. Baur, A. Beretvas, M. Bowden, J. Butler, A. Byon-Wagner, I. Churin, D. Denisov, M. Diesburg, D.P. Eartly, J.E. Elias, J. Freeman, I. Gaines, H. Glass, S. Gourlay, D. Green*, J. Hanlon, R. Harris, W. Knopf, S. Kwan, M. Lamm, S. Lammel, P. Mantsch, J. Marafino, C.S. Mishra, N. Mokhov, J. Ozelis, A. Para, J. Patrick, A. Pla-Dalmau, R. Raja, A. Ronzhin, T. Sager, M. Shea, R.P. Smith, R. Vidal, D. Walsh, R. Wands, E. Wilmsen, W.J. Womersley, W. Wu, A. Yagil

University of Florida

P. Avery, R. Field, J. Konigsberg, A. Korytov, G. Mitselmakher*†, A. Nomerotski, P. Ramond, J. Yelton

Florida State University

H. Baer, M. Bertoldi, V. Hagopian*, K.F. Johnson, J. Thomaston, H. Wahl

Florida State University (SCRI)

M. Corden*, C. Georgiopoulos, K. Hays, T. Huehn, S. Youssef

University of Illinois at Chicago

M. Adams*, M. Chung, H. Goldberg, J. Solomon

University of Iowa

N. Akchurin, M. Aykac, M. Kaya, E. McCliment, J. McPherson, M. Miller, Y. Onel*, E. Ozel, S. Ozkorucuklu, L. Pasquali, P. Pogodin, E. Ruth, R. Winsor

Iowa State University

E.W. Anderson*, J. Hauptman, J. Wightman

Johns Hopkins University

B. Barnett, C.Y. Chien*, M. Frautschi, D. Gerdes, G. Hu, A. Pevsner

Lawrence Livermore National Laboratory

D. Klem, M. Kreisler, X. Shi, K. van Bibber, T. Wenaus, D. Wright, C. Wuest*

Los Alamos National Laboratory

R. Barber, Z. Chen, W. Christensen, S. Han, J. Hanlon, C. Johnson, R. Michaud, G. Mills, A. Palounek, B. Rodriguez, T. Thompson, K. Woloshun, H.J. Ziock*

University of Maryland

A. Baden, A. Ball, R. Bard, S.C. Eno, D. Fong, N.J. Hadley, R.G. Kellogg, S. Kunori, M. Murbach, A. Skuja*

Massachusetts Institute of Technology

G. Bauer, J. Friedman, E. Hafen, S. Pavlon, L. Rosenson, P. Sphicas*, S. Sumorok, S. Tether

University of Minnesota

P. Border, D. Ciampa, P. Cushman, K. Heller, M. Marshak, R. Rusack*, C. Timmermans, J. Wilcox

University of Mississippi

K. Bhatt, B. Bolen, M. Booke, D. Craig, L. Cremaldi, R. Kroeger, J. Reidy*, D. Sanders, D. Summers, Y. Yuan

University of Nebraska

W. Campbell, M. Hu, G.R. Snow*

Northeastern University

G. Alverson, H. Fenker, J. Moromisato, S. Reucroft*, D. Ruuska, J. Swain, L. Taylor, E. von Goeler, T. Yasuda

Northwestern University

B. Gobbi*, P. Rubinov, R. Tilden

University of Notre Dame

B. Baumbaugh, J.M. Bishop, N. Biswas, J. Marchant, R. Ruchti*, J. Warchol, M. Wayne

Ohio State University

D. Acosta, B. Bylsma, L.S. Durkin, D. Fisher, J. Hoftiezer, R. Hughes, M. Johnson, D. Larson, P. Lenous, T.Y. Ling*, C.J. Rush, V. Sehgal, B. Winer

Princeton University

C. Bopp, P. Denes, V. Gupta, D. Marlow, P. Piroue*, D. Stickland, H. Stone, C. Tully, R. Wixted

Purdue University

V.E. Barnes*, G. Bolla, D. Bortoletto, A. Bujak, D.D. Carmony, M. Fahling, A. Garfinkel, L. Gutay, A.T. Lassanen, S. Medved, Q. Shen

Rice University

D.L. Adams*, M. Corcoran, G. Eppley, H.E. Miettinen, P. Padley, E. Platner, J. Roberts, P. Yepes

University of Rochester

A. Bodek*, H. Budd, P. de Barbaro, W. Sakumoto, E. Skup

University of Texas at Dallas

R.C. Chaney, E.J. Fenyves*, H.D. Hammack, N.P. Johnson, D.J. Suson

Texas Tech University

O. Ganel, V. Papadimitriou, A. Sill, R. Wigmans*

Virginia Polytechnic Institute and State University

K. Blankenship, B. Lu, L.W. Mo*, T.A. Nunamaker

University of Wisconsin

T. Alexopoulos, W. Badgett, D. Carlsmith, S. Dasu, A. Erwin, F. Feyzi, C. Foudas,
M. Jaworski, J. Lackey, R. Loveless, S. Lusin, D. Reeder, and W.H. Smith*

* Institutional Representative

† Joint Appointment with Fermilab

Table A-3: US CMS Subsystem Participation.

Endcap Muon	Hadron Calorimeter	Trigger/DAQ
Alabama	Boston	UC Davis
UC Davis	UCLA	UCLA
UCLA	Fairfield	UC San Diego
UC Riverside	Fermilab	Fermilab
Carnegie Mellon	Florida State	Iowa
Fermilab	Illinois Chicago	Iowa State
Florida	Iowa	MIT
Livermore	Iowa State	Mississippi
SUNY Stony Brook	Maryland	Nebraska
Northeastern	Minnesota	Northeastern
Ohio State	Mississippi	Ohio State
Purdue	Notre Dame	Rice
Rice	Purdue	Wisconsin
UT Dallas	Rochester	
Wisconsin	Texas Tech	
	Virginia Tech	
Electromagnetic Calorimeter	Tracking	Software
Brookhaven	UC Davis	UC Davis
Caltech	Fermilab	UCLA
Fermilab	Florida State (SCRI)	UC Riverside
Livermore	Johns Hopkins	UC San Diego
Minnesota	Livermore	Caltech
Northeastern	Los Alamos	Carnegie Mellon
Princeton	Mississippi	Fermilab
	Northwestern	Florida
	Purdue	Florida State (SCRI)
	Rice	Johns Hopkins
	Texas Tech	Livermore
		Maryland
		Missesota
		SUNY Stony Brook
		Northeastern
		Princeton
		Purdue
		Rice
		Wisconsin

CMS Management Board

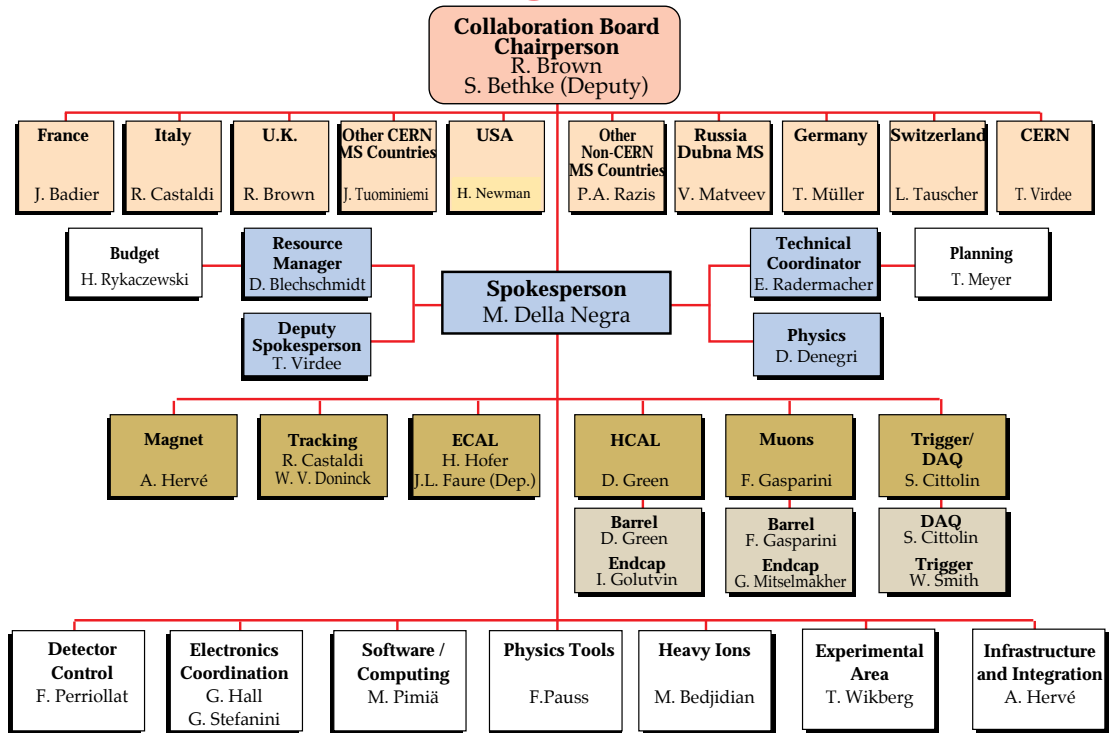


Fig. A-1

CMS Finance Board

CMS-TS-95.0012 – Rev. 97.06.24

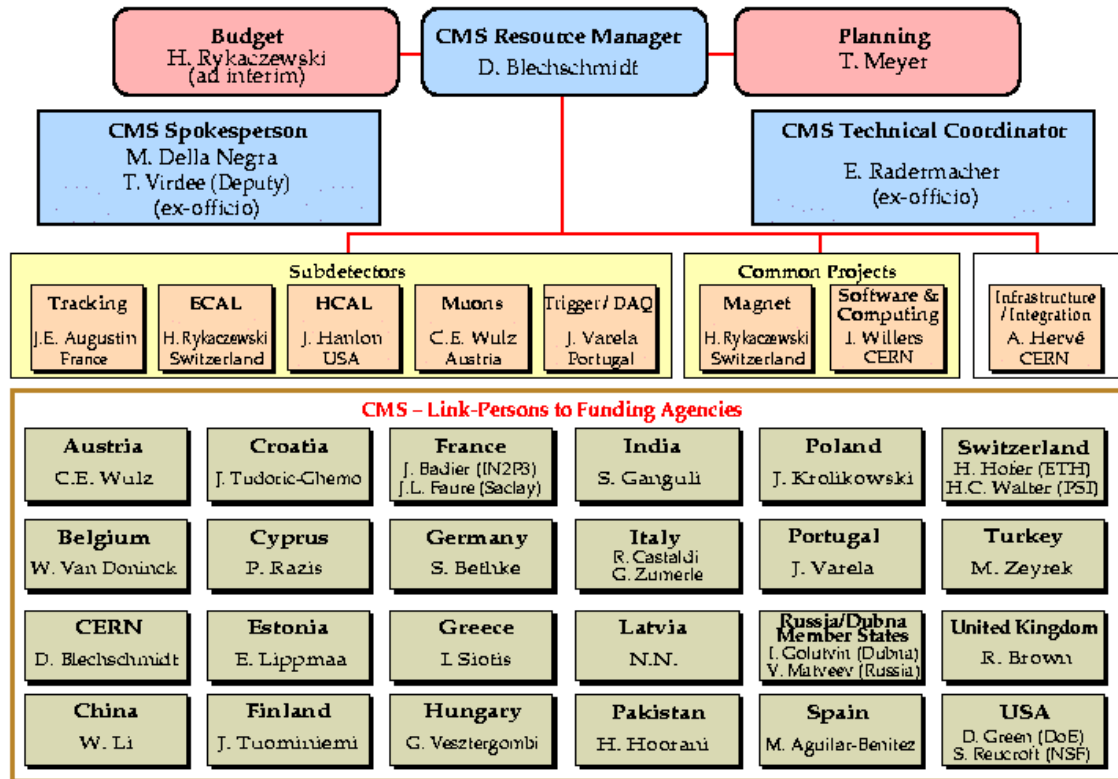


Fig. A-2

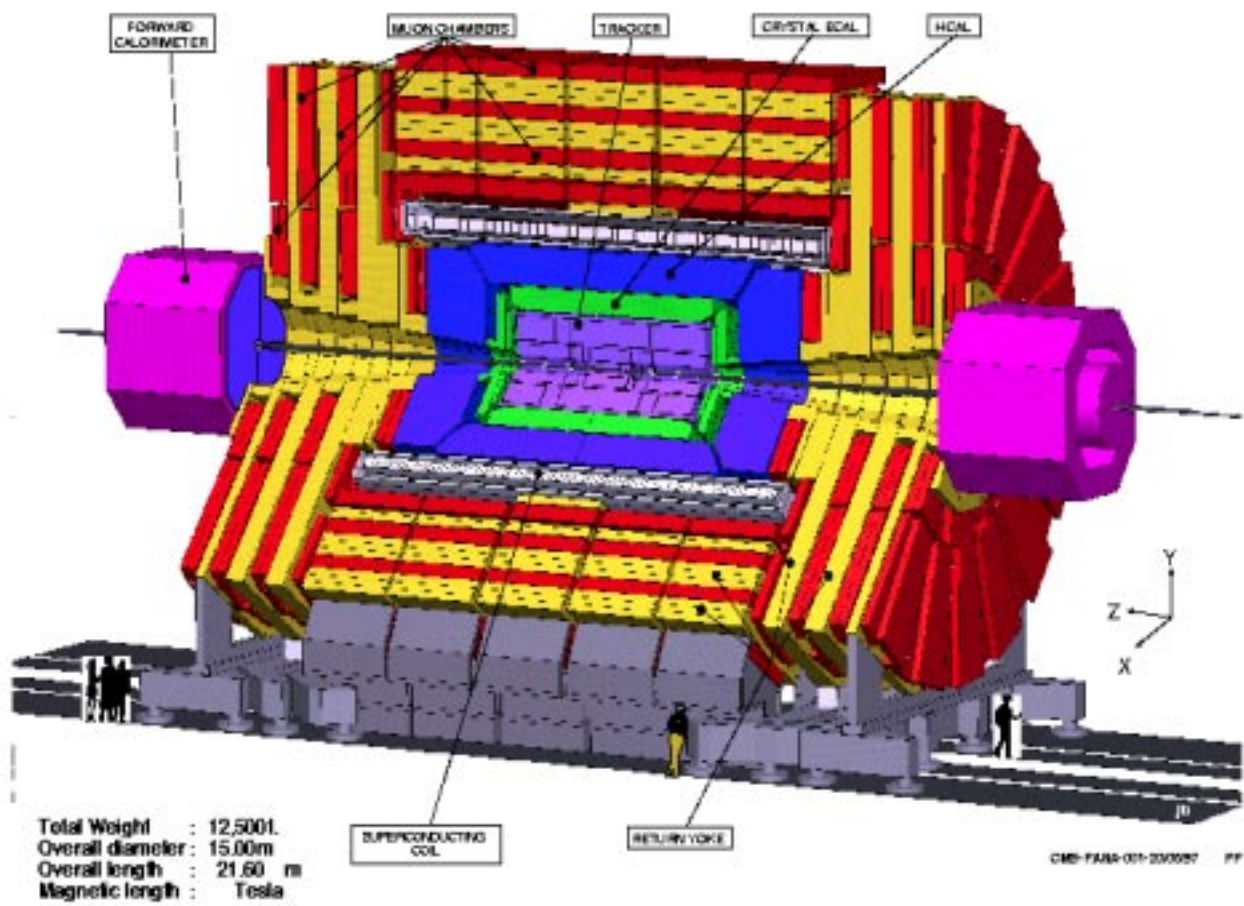
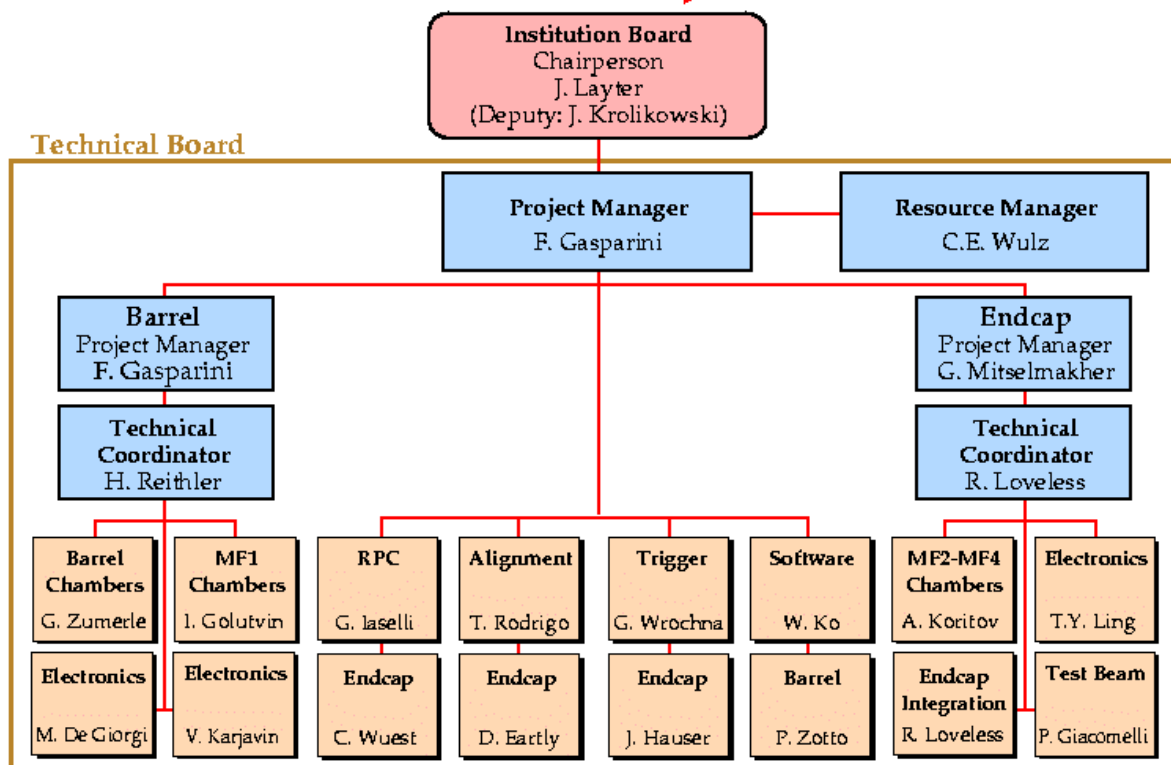


Fig. A-3 View of the CMS Detector.

Muon Project



OHS-TS-96.0016

Fig. A-4

HCAL Project

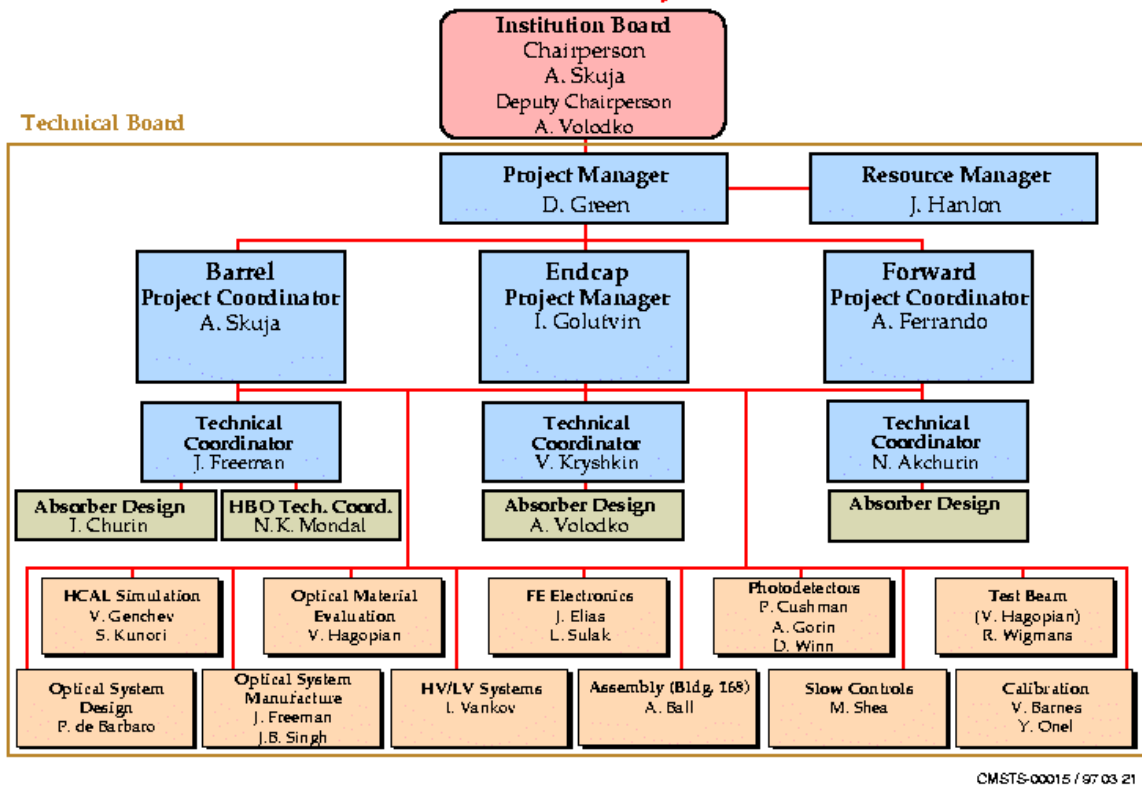


Fig. A-5

Trigger and Data Acquisition Project

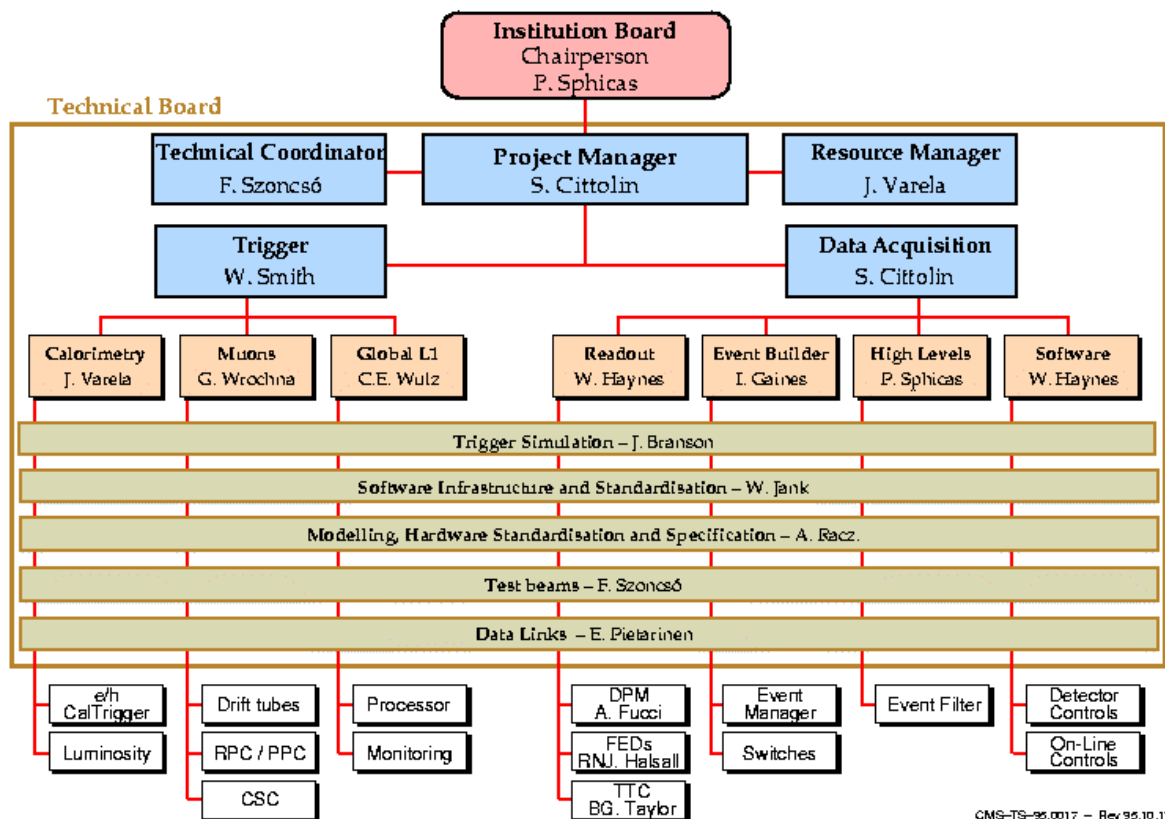
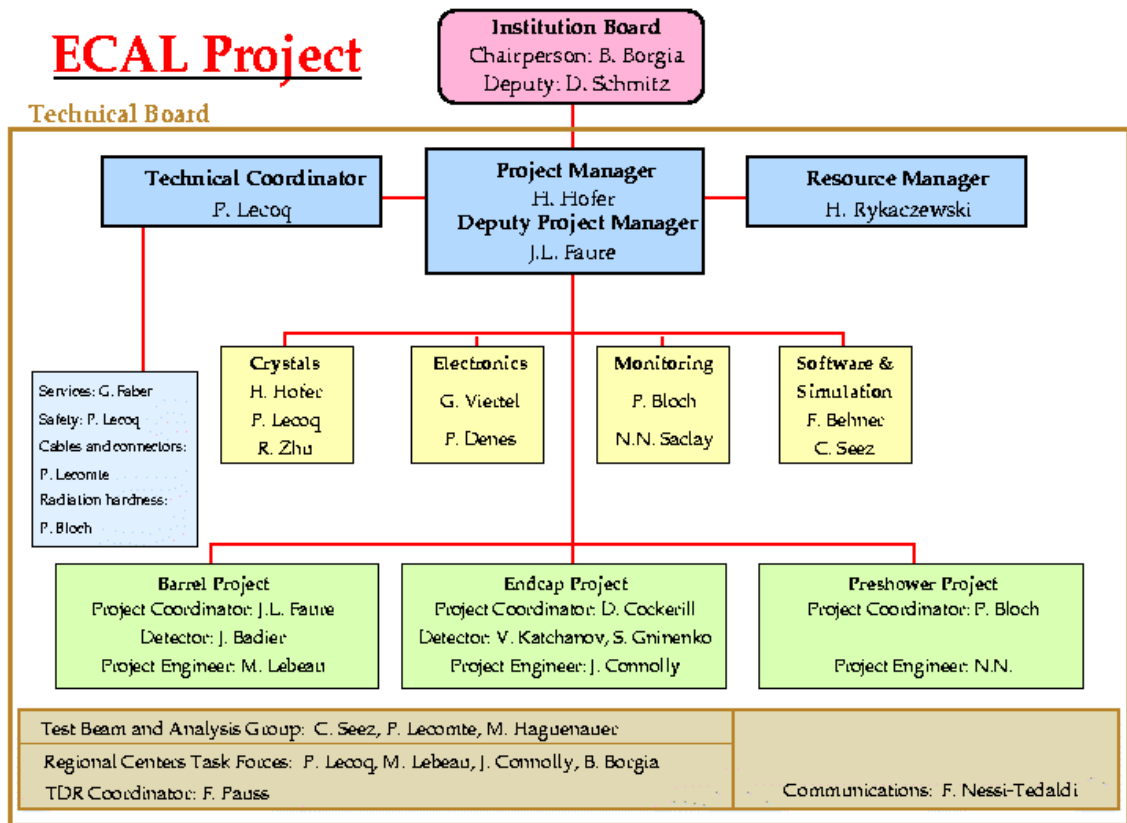


Fig. A-6

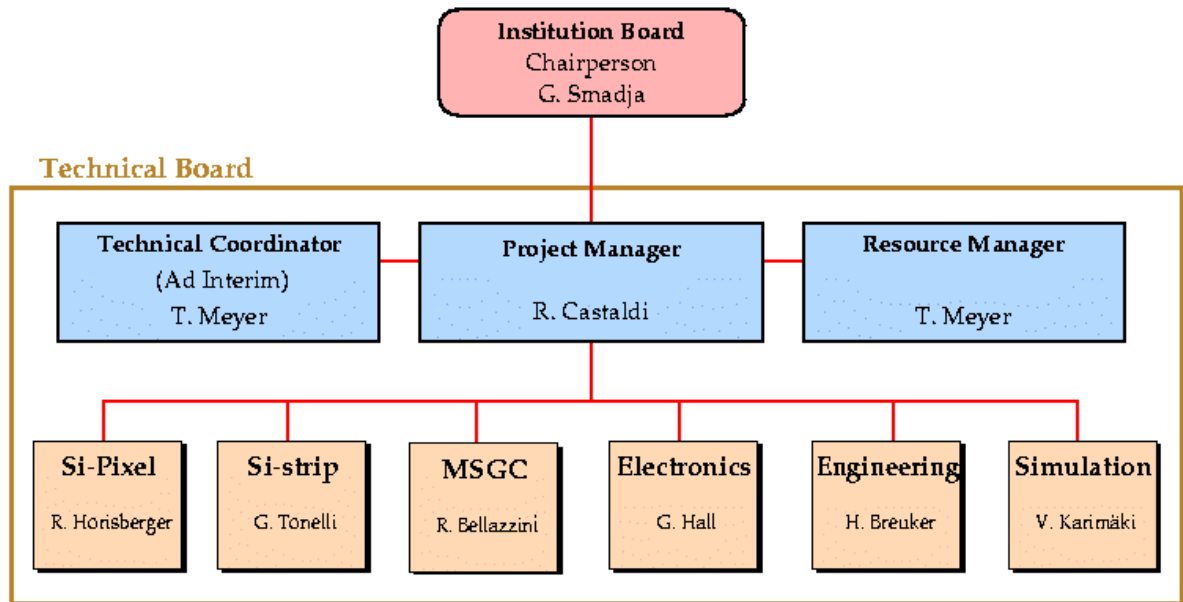
ECAL Project



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Fig. A-7

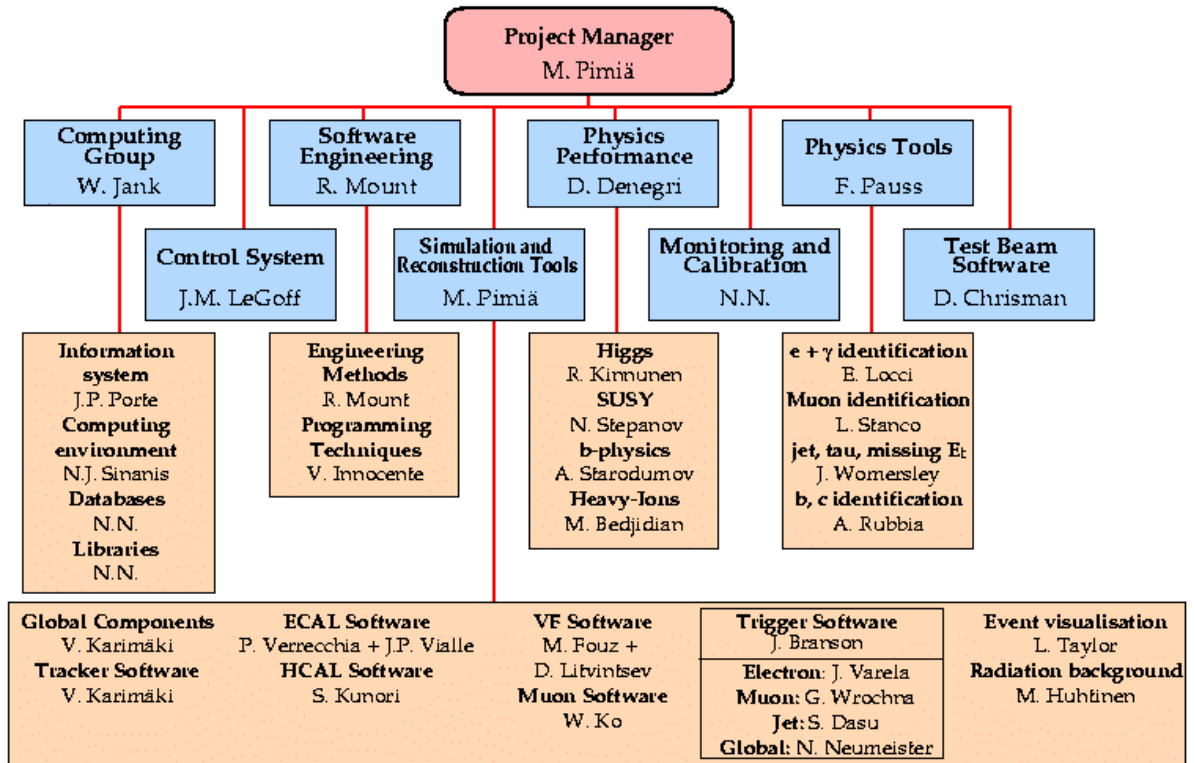
Tracking Project



CMS-TS-00013
Rev. 06.10.17

Fig. A-8

Software Technical Board



CMS-TS-96.0019

Fig. A-9

Magnet Project

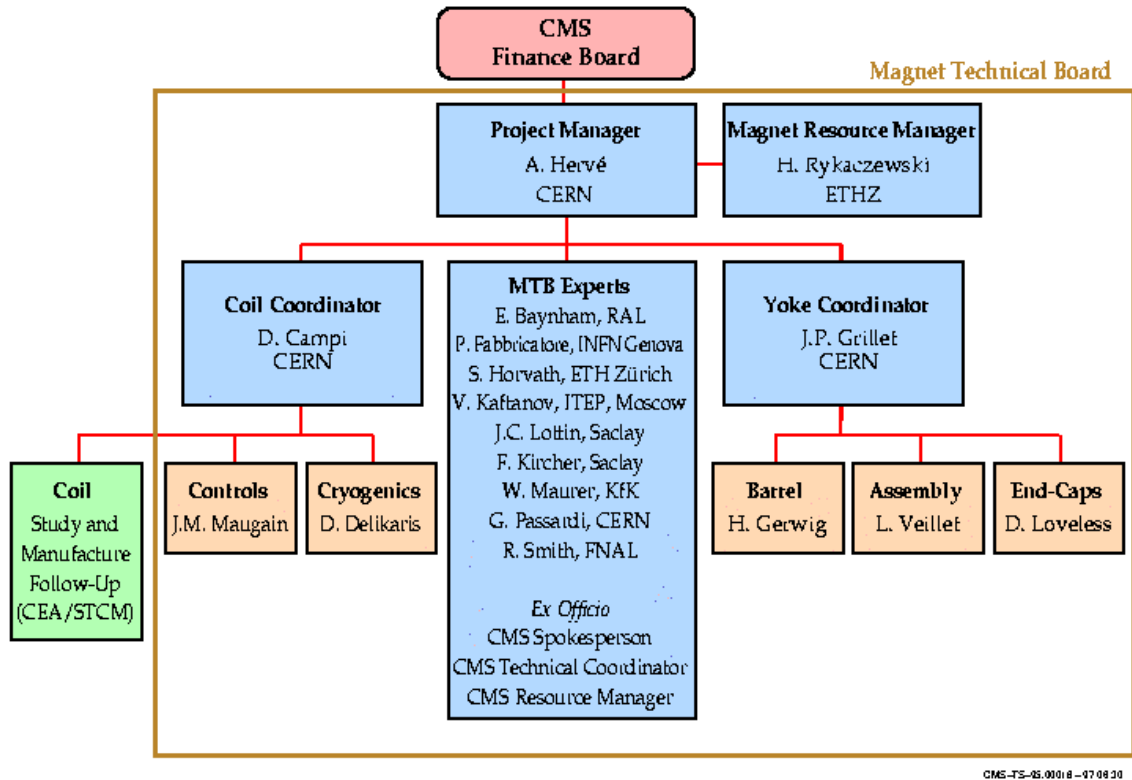


Fig. A-10

Executive Board -1998

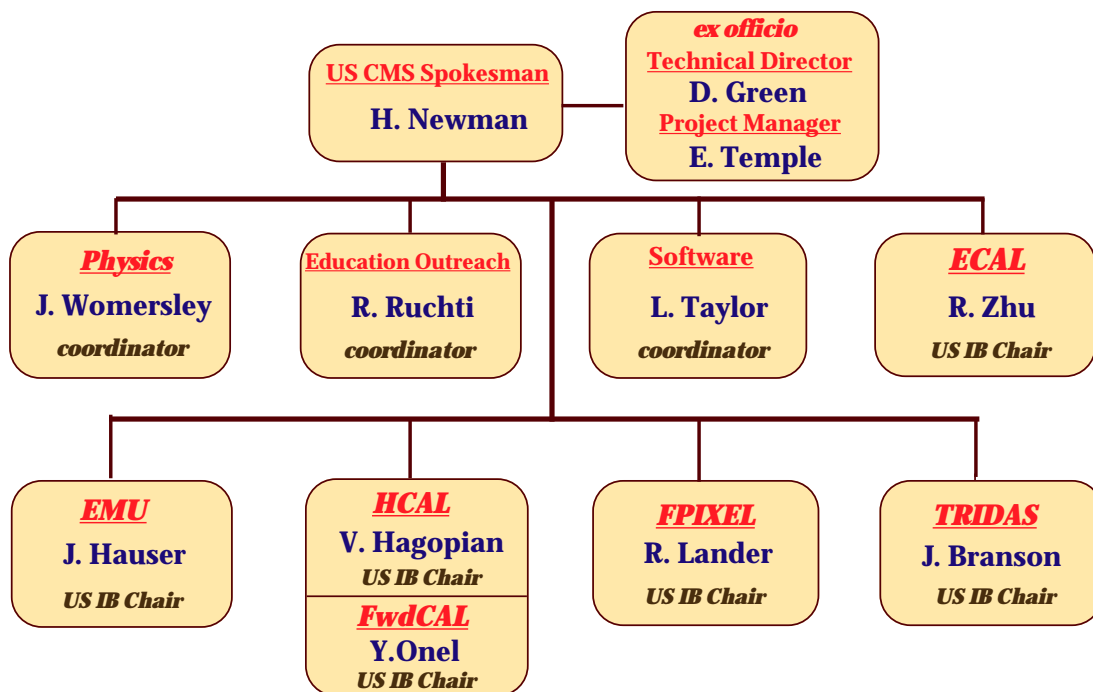


Fig. A-11

